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ABSTRACT OF THE DISCLOSURE

The invention provides a program conversion apparatus which performs parallelization for a multi-thread microprocessor on an intermediate program level. A 5 parallelization apparatus of the program conversion apparatus includes a fork spot determination section, a register allocation section and an instruction reordering section. The fork spot determination section determines a fork spot and a fork system based on a result of a register allocation trial 10 performed by the register allocation section, the number of spots at which memory data dependence is present, and branching probabilities and a data dependence occurrence frequency obtained from a profile information file. The instruction reordering section records instructions preceding to and 15 succeeding the FORK instruction in accordance with the determination.